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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/563,554

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Jean-Bernard Fischer

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YOUNG & THOMPSON

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EXAMINER

GELAGAY, SHEWAYE

ART UNIT

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/563,554	<b>Applicant(s)</b> FISCHER ET AL.	
	<b>Examiner</b> SHEWAYE GELAGAY	<b>Art Unit</b> 2437	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 1/5/06.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 January 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>1/5/06</u> .  | 6) <input type="checkbox"/> Other: _____                          |

**DETAILED ACTION**

1. Claims 1-16 are pending for consideration.

***Priority***

2. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

***Information Disclosure Statement***

3. The information disclosure statement (IDS) submitted on 01/05/06 has been considered by the examiner (see attached PTO 1449).

***Oath/Declaration***

4. The Oath filed on 5/23/06 complies with all the requirements set forth in MPEP 602 and therefore is accepted.

***Drawings***

5. The drawings were received on 1/5/06. These drawings are accepted.

***Specification***

6. The disclosure is objected to because of the following informalities: The specification has to include proper section headings as outlined below. The following

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guidelines illustrate the preferred layout for the specification of a utility application.

These guidelines are suggested for the applicant's use.

### ***Arrangement of the Specification***

As provided in 37 CFR 1.77(b), the specification of a utility application should include the following sections in order. Each of the lettered items should appear in upper case, without underlining or bold type, as a section heading. If no text follows the section heading, the phrase "Not Applicable" should follow the section heading:

- (a) TITLE OF THE INVENTION.
- (b) CROSS-REFERENCE TO RELATED APPLICATIONS.
- (c) STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT.
- (d) THE NAMES OF THE PARTIES TO A JOINT RESEARCH AGREEMENT.
- (e) INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A COMPACT DISC.
- (f) BACKGROUND OF THE INVENTION.
  - (1) Field of the Invention.
  - (2) Description of Related Art including information disclosed under 37 CFR 1.97 and 1.98.
- (g) BRIEF SUMMARY OF THE INVENTION.
- (h) BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S).
- (i) DETAILED DESCRIPTION OF THE INVENTION.
- (j) CLAIM OR CLAIMS (commencing on a separate sheet).
- (k) ABSTRACT OF THE DISCLOSURE (commencing on a separate sheet).
- (l) SEQUENCE LISTING (See MPEP § 2424 and 37 CFR 1.821-1.825. A "Sequence Listing" is required on paper if the application discloses a nucleotide or amino acid sequence as defined in 37 CFR 1.821(a) and if the required "Sequence Listing" is not submitted as an electronic document on compact disc).

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

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8. Claims are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 5 recites "and/or" in line 4, the phrase "and/or" renders the claim(s) indefinite because the claim(s) include(s) elements not actually disclosed (those encompassed by "and/or"), thereby rendering the scope of the claim(s) unascertainable. See MPEP § 2173.05(d).

9. Claim 6 is also rejected for being dependent on a rejected claim.

### ***Claim Rejections - 35 USC § 101***

10. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

11. Claim 1 is rejected under 35 U.S.C. 101 as not falling within one of the four statutory categories of invention. While the claims recite a series of steps or acts to be performed, a statutory "process" under 35 U.S.C. 101 must (1) be tied to particular machine, or (2) transform underlying subject matter (such as an article or material) to a different state or thing. See page 10 of *In Re Bilski* 88 USPQ2d 1385. The instant claims are neither positively tied to a particular machine that accomplishes the claimed method steps nor transform underlying subject matter, and therefore do not qualify as a statutory process. The method of making the execution of a computer program secure including steps of "stacking a predetermined value" and "unstacking said stack" are broad enough that the claim could be completely performed mentally, verbally or without a machine nor is any transformation apparent. Thus, to qualify as a statutory process,

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the claim should recite the particular machine to which it is tied, for example, by identifying the apparatus that accomplishes the method steps, or positively recite the subject matter that is being transformed, for example, by identifying the material that is being changed to a different state.

12. Claim 13 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Claim 13 recites, "information medium readable by a computer system, ... such as transmissible medium such as an electrical or optical signal," however, a transmissible medium is a form of energy that does not fall within one of the statutory categories. Therefore, the claim is non-statutory.

13. Claim 14 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. The specification, on page 9, lines 12-20 recites "information medium readable by a computer system ... or transmissible medium such as an electrical or optical signal." Transmissible medium typically embody computer readable instructions, data structures, program modules or other data in a modulated data signal such as a carrier wave or other transport mechanism and include any information delivery media is neither a process nor a product and therefore does not fall within one of the four statutory classes of § 101. Because the full scope of the claim as properly read in light of the disclosure encompasses non-statutory subject matter, the claim as a whole is non-statutory.

***Claim Rejections - 35 USC § 102***

14. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

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A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

15. Claims 1-2, 5-9, 11 and 13-15 are rejected under 35 U.S.C. 102(b) as being anticipated by Stahl US 5,274,817.

As per claim 1:

Stahl teaches a method of making the execution of a computer program secure (*col. 1, line 36; ensuring that the integrity of the stack during program execution*), the method being characterized in that it includes:

a step of stacking a predetermined value in an instruction stack of the program; (*col. 1, lines 55-67; col. 4, lines 52-55; storing signature word in the stack*) and

a step of unstacking said stack adapted, where appropriate, to detect an execution anomaly. (*col. 1, lines 62-67; col. 4, lines 57-64; col. 5, lines 8-17; if the signature word stored on the stack matches the entry address of the subroutine which was just execute. ..if the compared values do not match, it is assumed that an error has occurred and control is passed to the block where a software interrupt is executed*)

As per claim 2:

Stahl teaches all the subject matter as discussed above. Stahl further discloses stacking and unstacking steps are respectively associated with elements of at least one subset of instructions of said program. (*col. 4, lines 60-col, 5, lines 37; a branch to the subroutine is executed, the return address is stored on the stack ...when the return instruction is encountered, the return address is retrieved from the stack*)

As per claim 5:

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Stahl teaches all the subject matter as discussed above. Stahl further discloses said program is written in a programming language including a first instruction whose execution implements said stacking step and/or a second instruction whose execution implements said unstacking step. (col. 2, line 61-col 4, line 21; col. 4, lines 60-col, 5, lines 37)

As per claim 6:

Stahl teaches all the subject matter as discussed above. Stahl further discloses second instruction terminates said program or a subroutine of said program. (col. 2, line 61-col 4, line 21; col. 4, lines 60-col, 5, lines 37)

As per claim 7:

Stahl teaches all the subject matter as discussed above. Stahl further discloses said predetermined value is representative of a subset of critical instructions of said program. (col. 2, line 61-col 4, line 21; col. 4, lines 60-col, 5, lines 37)

As per claim 8:

Stahl teaches all the subject matter as discussed above. Stahl further discloses it includes an anomaly processing step executed if, during said unstacking step, a value other than said predetermined value is unstacked. (col. 2, line 61-col 4, line 21; col. 4, lines 60-col, 5, lines 37)

As per claim 9:

Stahl teaches all the subject matter as discussed above. Stahl further discloses wherein said program includes at least one call to a subroutine, characterized in that said stacking step is effected before said call and said predetermined value is



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eliminated from said stack during execution of said subroutine. (col. 2, line 61-col 4, line 21; col. 4, lines 60-col, 5, lines 37)

As per claim 11:

Stahl teaches all the subject matter as discussed above. Stahl further discloses wherein said programming includes at least one call to a subroutine, characterized in that said stacking step is effected during execution of said subroutine and said predetermined value is eliminated from said stack after execution of said subroutine. (col. 2, line 61-col 4, line 21; col. 4, lines 60-col, 5, lines 37)

As per claim 13:

Stahl teaches all the subject matter as discussed above. Stahl further discloses Information medium readable by a computer system, and where appropriate totally or partially removable, in particular a CD-ROM, or a magnetic medium, such as a hard disk or diskette, or a transmissible medium such as an electrical or optical signal, characterized in that it includes instructions of a computer program for implementing a method according to claim 1 when that program is loaded into and executed by an electronic data processing system. (col. 2, line 61-col 4, line 21; col. 4, lines 60-col, 5, lines 37)

As per claim 14:

Stahl teaches all the subject matter as discussed above. Stahl further discloses computer program stored on an information medium, said program including instructions for executing a method according to claim 1 when that program is loaded

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into and executed by an electronic data processing system. (col. 2, line 61-col 4, line 21; col. 4, lines 60-col, 5, lines 37)

As per claim 15:

Stahl teaches all the subject matter as discussed above. Stahl further discloses electronic entity that has been made secure characterized in that it includes means for implementing a method according to claim 1. (col. 2, lines 15-33)

### ***Claim Rejections - 35 USC § 103***

16. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

17. Claims 3-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stahl US 5,274,817 in view McInerney et al. (hereinafter McInerney) US 5,956,479.

As per claim 3:

Stahl teaches all the subject matter as discussed above. Stahl does not explicitly disclose elements are respectively an opening bracket and a closing bracket in a system of brackets. McInerney in analogous art, however, discloses that elements are respectively an opening bracket and a closing bracket in a system of brackets. (*col. 15, lines 12-21; set-up instruction map for function execution, ... such as opening and closing brace*) Therefore it would have been obvious to one ordinary skill in the art at the time the invention was made to modify the method disclosed by Stahl with

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McInerney in order to set-up instruction map for a function execution to some predefined source position, such as opening and closing brace. (col. 15, lines 15-21; McInerney)

As per claim 4:

The combination of Stahl and McInerney teaches all the subject matter as discussed above. Stahl further discloses in that said unstacking step is associated with a return instruction of said program or a subroutine of said program. (col. 4, lines 60-col, 5, lines 37)

18. Claims 10 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stahl US 5,274,817 in view of Szor US 2004/0158729.

As per claim 10:

Stahl teaches all the subject matter as discussed above. Stahl does not explicitly disclose predetermined value is the address of an anomaly processing function. Szor in analogous art, however, discloses predetermined value is the address of an anomaly processing function. (figure 2, page 2, pp. 33-page 3, pp. 40; *from stack call operation ...determine location of call module if not to be in executable area of memory, the likelihood that the call module is malicious code is significant*) Therefore it would have been obvious to one ordinary skill in the art at the time the invention was made to modify the method disclosed by Stahl with Szor in order to prevent unauthorized access by malicious hackers or replicating malware. (page 3, pp.40; Szor)

As per claim 12:

Stahl teaches all the subject matter as discussed above. Stahl does not explicitly disclose predetermined value is the address of an anomaly processing function. Szor in analogous art, however, discloses predetermined value is the address of an anomaly processing function. (*figure 2, page 2, pp. 33-page 3, pp. 40; from stack call operation ...determine location of call module if not to be in executable area of memory, the likelihood that the call module is malicious code is significant*) Therefore it would have been obvious to one ordinary skill in the art at the time the invention was made to modify the method disclosed by Stahl with Szor in order to prevent unauthorized access by malicious hackers or replicating malware. (page 3, pp.40; Szor)

19. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Stahl US 5,274,817 in view of Zisowski US 2003/0188174.

As per claim 16:

Stahl teaches all the subject matter as discussed above. Stahl does not explicitly disclose the electronic entity is a smart card. Zisowski in analogous art, however, discloses that the electronic entity is a smart card. (page 2, pp. 17 and 30) Therefore it would have been obvious to one ordinary skill in the art at the time the invention was made to modify the method disclosed by Stahl with Zisowski in order to provide a system for detecting a possible malicious program that allows the identification of missing, added or modified program modules to a computer program running on microcontrollers. (page 2, pp. 29-30; Zisowski)

### **Conclusion**

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to SHEWAYE GELAGAY whose telephone number is (571)272-4219. The examiner can normally be reached on 8:00 am to 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Emmanuel Moise can be reached on 571-272-3865. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/S. G./  
Examiner, Art Unit 2437

/Emmanuel L. Moise/  
Supervisory Patent Examiner, Art Unit 2437

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